PATENT
Customer Number 22,852
Attorney Docket No. 1706-34-1

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:	)	
	)	
Roy Zisapel et al.	)	Group Art Unit: 2154
	)	
Serial No.: Not Yet Assigned	)	Examiner: K. Coulter
	)	
Filed: Concurrently Herewith	)	
	)	
For: Load Balancing	)	
	)	

Assistant Commissioner for Patents
Washington, DC 20231

Sir:

PRELIMINARY AMENDMENT

Before examination, please amend this application as follows:

IN THE CLAIMS:

Amend claims 5, 6, 7 and 18 as follows:

5. (Amended) A method for non-geographical load balancing requests on a network, the method comprising:

determining the network proximity of a requestor with respect to each of at least two [load balancers] servers located at different geographical locations;

designating a closest one of said [load balancers] at least two servers by ranking said [load balancers] at least two servers by network proximity; and

directing requests from said requestor to [said closest load balancer] one of said at least two servers having greatest network proximity,

said network proximity being determined by at least one of latency and number of hops between said requestor and each of said at least two servers.

Claim 6, line 2, change "load balancer" to --server--.

7. (Amended) A method according to claim 5 and further comprising:

monitoring the current load of each of said [load balancer] servers; and

[performing said] directing [step wherein] requests from said requestor to one of said at least two servers when the current load of said [closest load balancer] one of said at least two servers is less than the current load of every other of said [load balancers] at least two servers.

18. (Amended) A network non-geographical load balancing system comprising:

a network;

at least two load balancers connected to said network; and

a requestor connected to said network;

wherein each of said at least two load balancers is operative to determine the network proximity of said requestor, and wherein at least one of said load balancers is operative to designate a closest one of said load balancers by ranking said load balancers by network proximity and to direct requests from either of said requestor and a subnet of said requestor to said closest load balancer,

wherein said network proximity is determined by at least two of latency, number of hops between said requestor and each of said at least two servers and server processing capacity of each of said at least two servers.

Add the following new claims:

--22. A method for non-geographical load balancing requests on a network, the method comprising:

determining the non-geographical quality of the relationship between a requestor and each of at least two servers located at different geographical locations, said non-geographical quality being determined by at least one of latency and number of hops between said requestor and each of said at least two servers;

designating a preferred one of said at least two servers by ranking said at least two servers by said non-geographical quality; and

carrying out non-geographical load balancing of requests based on said ranking.

23. A non-geographical network load balancing system comprising:

at least two servers located at different geographical locations; and

at least one non-geographical load balancer operative to assign requestors to individual ones of said at least two servers based on the non-geographical quality of the relationship between a requestor and each of at least two servers, said non-geographical quality being determined by at least one of latency and number of hops between said requestor and each of said at least two servers.

24. A method for non-geographical load balancing requests on a network, the method comprising:

determining the network proximity of a requestor with respect to each of at least two servers located at different geographical locations;

designating a closest one of said at least two servers by ranking said at least two servers by network proximity; and

directing requests from said requestor to one of said at least two servers having greatest network proximity,

said network proximity being determined by at least two of latency, number of hops between said requestor and each of said at least two servers and server processing capacity of each of said at least two servers.

25. A method for non-geographical load balancing requests on a network, the method comprising:

determining the non-geographical quality of the relationship between a requestor and each of at least two servers located at different geographical locations, said non-geographical quality being determined by at least two of latency, number of hops between said requestor and each of said at least two servers and server processing capacity of each of said at least two servers;

designating a preferred one of said at least two servers by ranking said at least two servers of said non-geographical quality; and

carrying out non-geographical load balancing of requests based on said ranking.

26. A non-geographical network load balancing system comprising:

at least two servers located at different geographical locations; and

at least one non-geographical load balancer operative to assign requestors to individual ones of said at least two servers based on the non-geographical quality of the relationship between a requestor and each of at least two servers, said non-geographical quality being determined by at least two of latency, number of hops between said requestor and each of said at least two servers and server processing capacity of each of said at least two servers.

27. A network load balancing system comprising:

a network;

at least two load balancers connected to said network; and

a requestor connected to said network;

wherein each of said at least two load balancers is operative to determine the network proximity of said requestor, and wherein at least one of said load balancers is operative to designate a closest one of said load balancers by ranking said load balancers by network proximity and to direct requests from either of said requestor and a subnet of said requestor to said closest load balancer;

wherein said network proximity is determined by at least one of latency and number of hops between said requestor and each of said at least two servers.--

REMARKS

Applicants express their appreciation to Examiner Kenneth Coulter for the courtesy of an interview which was granted to applicants' representative, Sanford T. Colb (Reg. No. 26,856 in parent application Serial No. 09/115,643). The interview was held on January 17, 2000. The substance of the interview is set forth in the Interview Summary issued in that application.

The application now contains claims 5-11, 13 and 18-27.

Claims 5-11 and 18-23 stood rejected in the parent application under 35 U.S.C. 103(a) as being unpatentable over Yu. Yu does indeed show non-geographical load balancing but does not show load balancing based on network proximity which takes into account either the number of hops or latency.

Claim 5 has been amended to specify and new claims 22 and 23 specify load balancing based on network proximity which is determined by at least one of latency and number of hops between a requestor and each of at least two servers.

Claim 18 has been amended to specify load balancing based on network proximity which is determined by at least two of latency, number of hops between the requestor and each of at least two servers and server processing capacity of each of the at least two servers.

New claims 24, 25 and 26, correspond respectively to claims 5, 22 and 23, but specify load balancing based on network proximity which is determined by at least two of latency, number of hops between the requestor and each of at least two servers and server processing capacity of each of the at least two servers.

New claim 27 corresponds to claim 18, but specifies load balancing based on network proximity which is determined by at least one of latency and number of hops between a requestor and each of at least two servers.

Inasmuch as all of the claims specify load balancing based on network proximity which is determined by at least either latency or number of hops, it is believed that all of claims 5-11 and 18-27 are allowable.

In view of the foregoing amendments, which clarify the distinctions between the present invention and the prior art, all of the claims are deemed to be allowable. Favorable consideration and allowance of the application is respectfully requested.

Respectfully submitted,

Dated:

By: _____
Sanford T. Colb
Reg. No. 26,856

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